

WHAT IS CLAIMED IS

1. An embroidery stitching machine comprising:
 - an embroidering frame for holding a work to be stitched and being driven in X-direction and Y-direction which is normal to said X-direction,
 - 5 stitch forming means for forming stitches at said work,
 - memory means for storing therein pattern data of embroidery patterns which may be selectable,
 - pattern selecting means operated to optionally select any of the embroidery patterns stored in said memory means,
- 10 an X-direction moving mechanism provided in a machine housing of said sewing machine and being movable in X-direction between a position adjacent a standard of said sewing machine and a position far from said position adjacent said standard,
- a Y-direction drive attachment for holding said embroidering frame,
- 15 said attachment having a Y-direction moving mechanism provided therewith which is movable in Y-direction normal to said X-direction, and being detachably connected to said X-direction moving mechanism,
- control means for controlling the operations of said X-direction moving mechanism, said Y-direction moving mechanism and said stitch forming means in accordance with the pattern data optionally selected by said pattern selecting means, thereby to form embroidery stitches at said work.
- 20
- 25 2. The embroidery stitching sewing machine as defined in claim 1, wherein said machine housing has a bed and a base provided therewith, said base being positioned beneath said bed, and wherein said X-direction moving means is housed within said base.
- 30 3. The embroidery stitching sewing machine as defined in claim 1, wherein a plurality of Y-direction drive attachments having Y-direction

moving mechanisms respectively may be detachably connected to said X-direction moving mechanism, said Y-direction moving mechanisms being so structured as to move different distances.

5 4. The embroidery stitching sewing machine as defined in claim 3, further comprising discriminating means for comparing the moving distances of said Y-direction moving mechanisms and the pattern data stored in said memory means to discriminate if the selected pattern data may form embroidery stitches by use of a Y-direction drive attachment
10 connected to said X-direction moving mechanism.

5. The embroidery stitching sewing machine as defined in claim 4, further comprising indicating means operated in response to the affirmative discrimination of said discriminating means to indicate the
15 pattern data of a pattern which may be stitched by use of a Y-direction drive attachment connected to said X-direction moving mechanism.

6. The embroidery stitching sewing machine as defined in claim 4, further comprising indicating means operated in response to the
20 affirmative discrimination of said discriminating means to indicate the Y-direction drive attachment connected to said X-direction moving mechanism and adapted to the corresponding pattern data.

7. The embroidery stitching sewing machine as defined in claim 4, further comprising prohibiting means operated in response to the negative
25 discrimination of said discriminating means to prohibit the stitching operation by use of the Y-direction drive attachment connected to said X-direction moving mechanism.

30 8. The embroidery stitching sewing machine as defined in claim 3,

further comprising means for setting an upper limit of stitching speed corresponding to a Y-direction drive attachment connected to said X-direction moving mechanism.

5 9. The embroidery stitching sewing machine as defined in claim 1, further comprising detecting means for detecting said Y-direction drive attachment connected to said X-direction moving mechanism.

10 10. The embroidery stitching sewing machine as defined in claim 9, further comprising prohibiting means for prohibiting the stitching operation by use of the Y-direction drive attachment in case said Y-direction drive attachment is not detected by said detecting means when said Y-direction drive attachment is connected to said X-direction moving mechanism.

15

11. The embroidery stitching sewing machine as defined in claim 1, further comprising motion amplifying means for amplifying the movement of said Y-direction moving mechanism beyond the movement of a drive source.

20

12. An embroidery stitching machine comprising;
an embroidering frame for holding a work to be stitched and being driven in X-direction and Y-direction which is normal to said X-direction,
stitch forming means for forming stitches at said work,
25 memory means for storing therein pattern data of embroidery patterns which may be selectable,
pattern selecting means operated to optionally select any of the embroidery patterns stored in said memory means,
an X-direction drive attachment detachably connected to a machine
30 housing of said sewing machine and having an X-direction moving

mechanism provided therein, said X-direction moving mechanism being movable in X-direction between a position adjacent a standard of said sewing machine and a position far from said position adjacent said standard,

5 a Y-direction drive attachment for holding said embroidering frame, said attachment having a Y-direction moving mechanism provided therewith which is movable in Y-direction normal to said X-direction, and being detachably connected to said X-direction moving mechanism,

10 control means for controlling the operations of said X-direction moving mechanism, said Y-direction moving mechanism and said stitch forming means in accordance with the pattern data optionally selected by said pattern selecting means, thereby to form embroidery stitches at said work.

15 13. The embroidery stitching sewing machine as defined in claim 12, wherein a plurality of Y-direction drive attachments having Y-direction moving mechanisms respectively, said Y-direction moving mechanisms being so structured as to move different distances.

20 14. The embroidery stitching sewing machine as defined in claim 13, further comprising discriminating means for comparing the moving distances of said Y-direction moving mechanisms and the pattern data stored in said memory means to discriminate if the selected pattern data may form embroidery stitches by use of a Y-direction drive attachment
25 connected to said X-direction moving mechanism.

15. The embroidery stitching sewing machine as defined in claim 14, further comprising indicating means operated in response to the affirmative discrimination of said discriminating means to indicate the pattern data of a pattern which may be stitched by use of a Y-direction
30

drive attachment connected to said X-direction moving mechanism.

16. The embroidery stitching sewing machine as defined in claim 14, further comprising indicating means operated in response to the affirmative discrimination of said discriminating means to indicate the Y-direction drive attachment connected to said X-direction moving mechanism and adapted to the corresponding pattern data.
17. The embroidery stitching sewing machine as defined in claim 14, further comprising prohibiting means operated in response to the negative discrimination of said discriminating means to prohibit the stitching operation by use of the Y-direction drive attachment connected to said X-direction moving mechanism.
18. The embroidery stitching sewing machine as defined in claim 13, further comprising means for setting an upper limit of stitching speed corresponding to a Y-direction drive attachment connected to said X-direction moving mechanism.
19. The embroidery stitching sewing machine as defined in claim 12, further comprising detecting means for detecting said Y-direction drive attachment connected to said X-direction moving mechanism.
20. The embroidery stitching sewing machine as defined in claim 19, further comprising prohibiting means for prohibiting the stitching operation by use of the Y-direction drive attachment in case said Y-direction drive attachment is not detected by said detecting means when said Y-direction drive attachment is connected to said X-direction moving mechanism.

21. An embroidery stitching machine comprising:
 - an embroidering frame for holding a work to be stitched and being driven in X-direction and Y-direction which is normal to said X-direction,
 - stitch forming means for forming stitches at said work,
- 5 memory means for storing therein pattern data of embroidery patterns which may be selectable,
 - pattern selecting means operated to optionally select any of the embroidery patterns stored in said memory means,
- 10 an X-direction moving mechanism provided in a machine housing of said sewing machine and being movable in X-direction between a position adjacent a standard of said sewing machine and a position far from said position adjacent said standard,
- 15 a Y-direction moving mechanism provided in a machine housing of said sewing machine and being movable in Y-direction normal to said X-direction,
 - an output portion which may be moved in said X and Y directions by said X and Y-direction moving mechanisms,
- 20 a Y-direction drive attachment for holding said embroidering frame, said Y-direction drive attachment being provided with a second Y-direction moving mechanism which is movable in Y-direction normal to said X-direction, and being detachably connected to said output portion,
- 25 control means operated in accordance with the pattern data selected by said pattern selecting means to control the operations of said X-direction moving mechanism, said Y-direction moving mechanism and said second Y-direction moving mechanism, thereby to form embroidery stitches at said work.

22. The embroidery stitching sewing machine as defined in claim 21, wherein a plurality of second Y-direction drive attachments having Y-direction moving mechanisms respectively, said Y-direction moving

mechanisms being so structured as to move different distances.